



## Aeroallergens, allergic disease, and climate change: Impacts and adaptation

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### Abstract:

Recent research has shown that there are many effects of climate change on aeroallergens and thus allergic diseases in humans. Increased atmospheric carbon dioxide concentration acts as a fertilizer for plant growth. The fertilizing effects of carbon dioxide, as well as increased temperatures from climate change, increase pollen production and the allergen content of pollen grains. In addition, higher temperatures are changing the timing and duration of the pollen season. As regional climates change, plants can move into new areas and changes in atmospheric circulation can blow pollen- and spore-containing dust to new areas, thus introducing people to allergens to which they have not been exposed previously. Climate change also influences the concentrations of airborne pollutants, which alone, and in conjunction with aeroallergens, can exacerbate asthma or other respiratory illnesses. The few epidemiological analyses of meteorological factors, aeroallergens, and allergic diseases demonstrate the pathways through which climate can exert its influence on aeroallergens and allergic diseases. In addition to the need for more research, there is the imperative to take preventive and adaptive actions to address the onset and exacerbation of allergic diseases associated with climate variability and change.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2880235>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Extreme Weather Event, Meteorological Factors, Precipitation, Temperature, Unspecified Exposure

**Air Pollution:** Allergens, Interaction with Temperature, Ozone, Particulate Matter, Other Air Pollution

**Air Pollution (other):** NOx, SO2, NO2

**Extreme Weather Event:** Flooding, Hurricanes/Cyclones

**Temperature:** Fluctuations

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

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## **Geographic Location:**

resource focuses on specific location

Global or Unspecified

## **Health Co-Benefit/Co-Harm (Adaption/Mitigation):**

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Dermatological Effect, Respiratory Effect

**Respiratory Effect:** Asthma, Upper Respiratory Allergy

## **Intervention:**

strategy to prepare for or reduce the impact of climate change on health

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## **Medical Community Engagement:**

resource focus on how the medical community discusses or acts to address health impacts of climate change

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## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

## **Resource Type:**

format or standard characteristic of resource

Review

## **Resilience:**

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

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## **Timescale:**

time period studied

Time Scale Unspecified